Colville Tribes Nutrient Criteria, Monitoring & Pollution Control Strategies

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Colville Nutrient Criteria

"Nutrients in all surface waters of the Reservation shall show no measurable change from natural conditions. Such waters shall be free from excess nutrients due to human activities that cause or contribute to undesirable or nuisance aquatic life or produce adverse physiological response in humans, animals, or plants."

Nutrient Criteria (slide 2)

"(a) Nutrient substances above natural background shall not be introduced into waters from non-permitted anthropogenic activities. Applicants of permits releasing any nutrient substances to waters of the Reservation shall request from the Department a determination in regard to potential for eutrophication (See "Implementation, Permits", section 4-8-18(d))."

Nutrient Criteria (slide 3)

"(b) Ecoregional reference conditions for nutrients determined by EPA initially may serve as recommended criteria for the Tribes and as a starting point and supporting information in developing more refined nutrient criteria for Reservation waters, using EPA technical guidance manuals and other scientifically defensible approaches. Such criteria shall fully reflect localized conditions and protect specific designated uses and may be expressed either as numeric criteria or as procedures to translate Tribal narrative criterion into a quantified endpoint in this Chapter."

Nutrient Criteria (slide 4)

"(c) Nutrient criteria for total nitrogen and total phosphorus apply to all waters. However, ammonia has an acute criterion applicable to mixing zones and chronic ammonia criteria applicable to all waters outside of mixing zones at all times. Ammonia concentration is pH and temperature dependent, and equations for calculating freshwater ammonia criterion are given in EPA Appendix C in Appendix A."

Nutrient Monitoring Strategy

- 1.4 million acre reservation area
- Includes portions of four 8-digit HUC
- 2,671 miles of river & stream
- 9,535 acres of lakes
- 28,496 acres of wetlands
- 36,100 acres of reservoir (Lks Roosevelt, Rufus Woods, Pateros)

Nutrient Monitoring Strategy

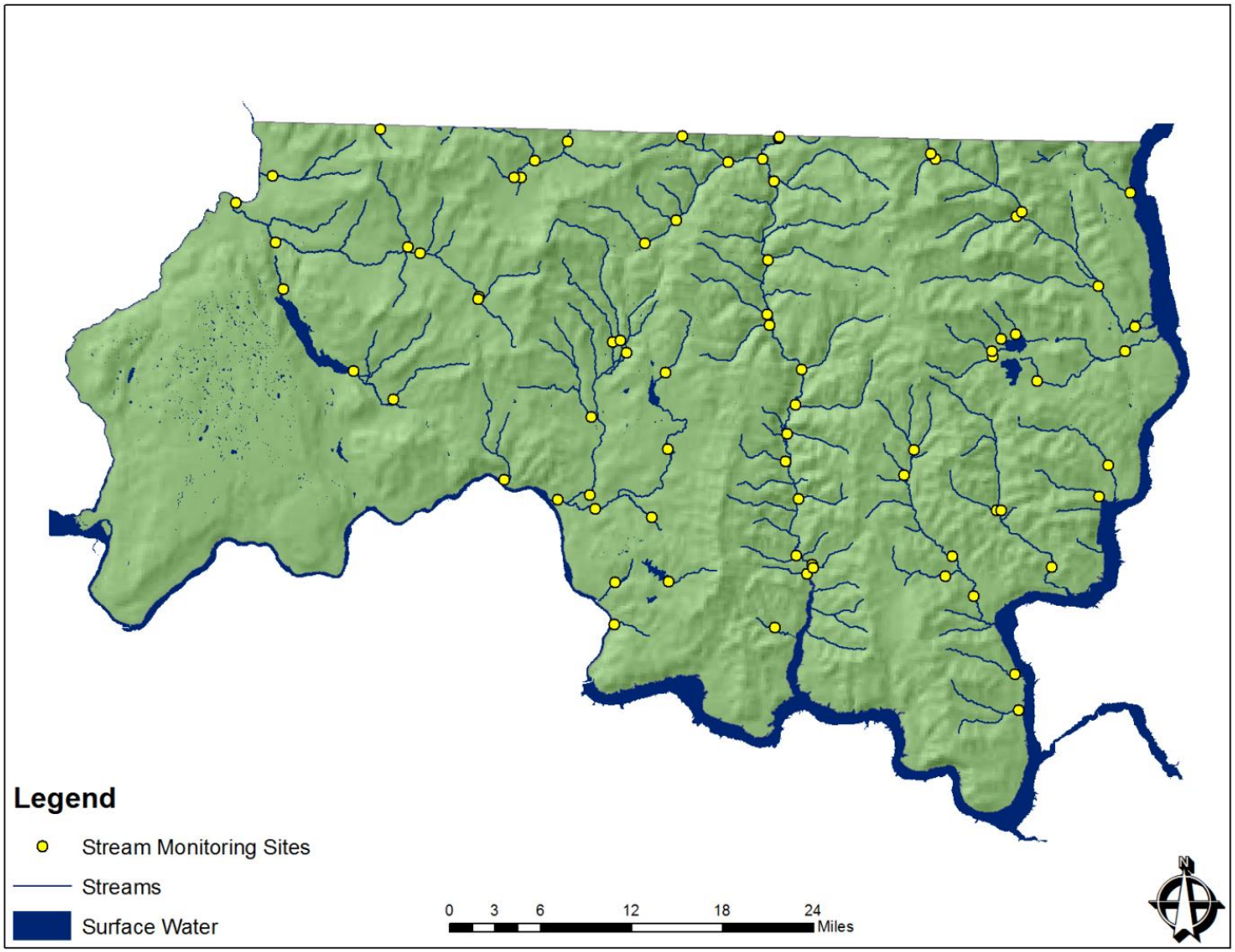
Goals & objectives

- Baseline
- Trends
- Identify pollution sources
- Assess compliance with WQS

Monitoring Strategy: Current

- 120 monitoring sites have been established over the past 20 years- some are consistently monitored, some picked up or dropped as funding allows.
- Nutrient & bacteria samples collected from 60 stream sites/yr
- Nutrient samples collected twice/year per site
- Other parameters measured at time of sampling
  - Temp
  - DO
  - pH
  - Turbidity
  - Conductivity

Nutrient Monitoring Strategy

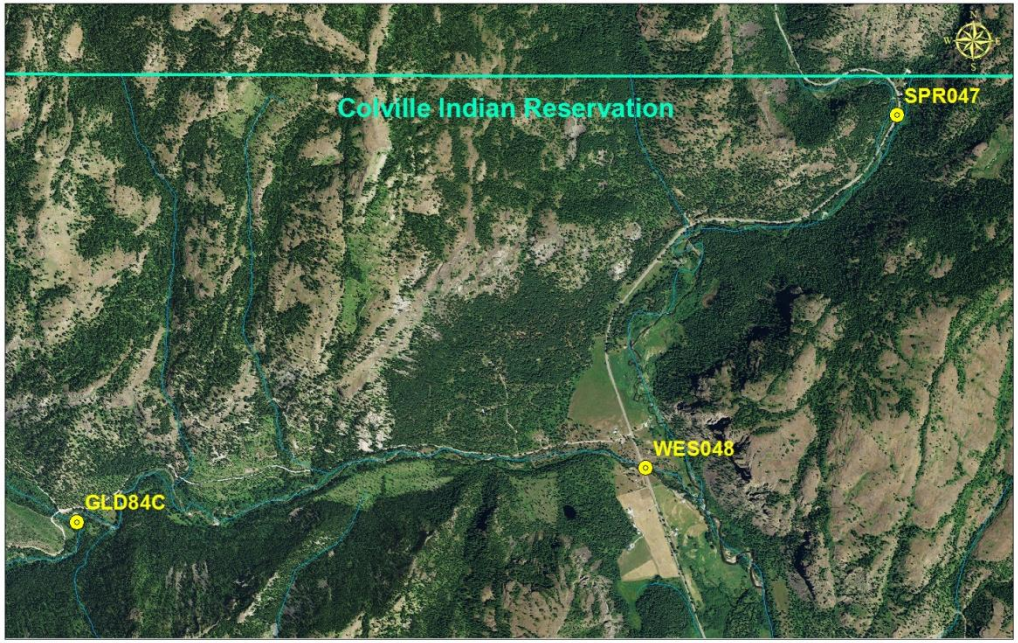


Monitoring Strategy: Current

- Site selection judgmental
  - typically just upstream of confluence with larger waters
  - Waters entering Reservation

Pro: 20 years of data valuable for baseline and trends monitoring

Con: Too few data to ID pollution sources or WQS compliance

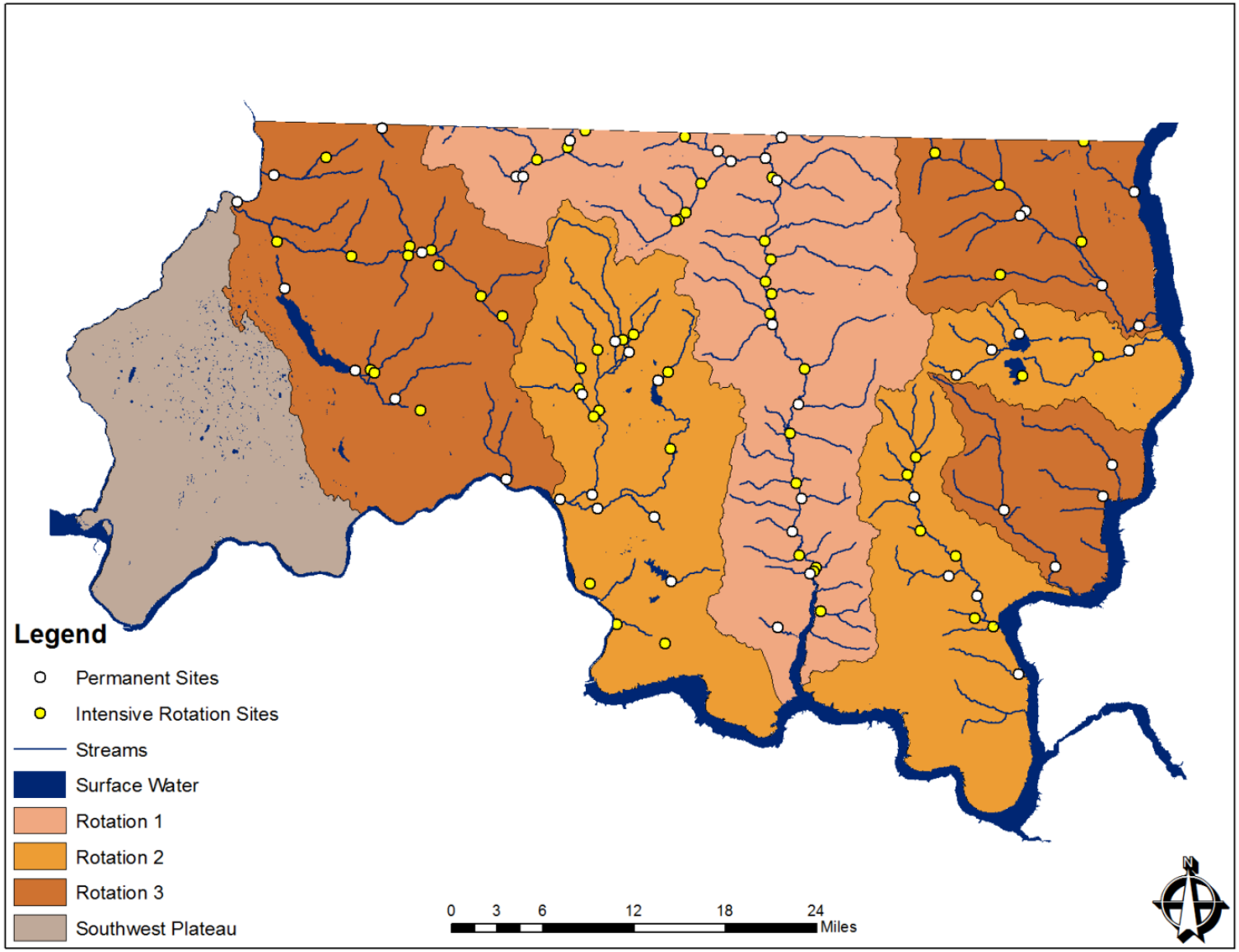


Monitoring Strategy: Revised

- Need to sample more intensively
- Sites organized into 3 groups
  - Each group sampled for a five year period- all sampled after 15 years
  - 20-25 monitoring sites per group
  - Nutrient/bacteria samples collected monthly

- Additional 50 sites across entire Reservation monitored monthly for flow and multi-probe parameters

Monitoring Strategy: Revised



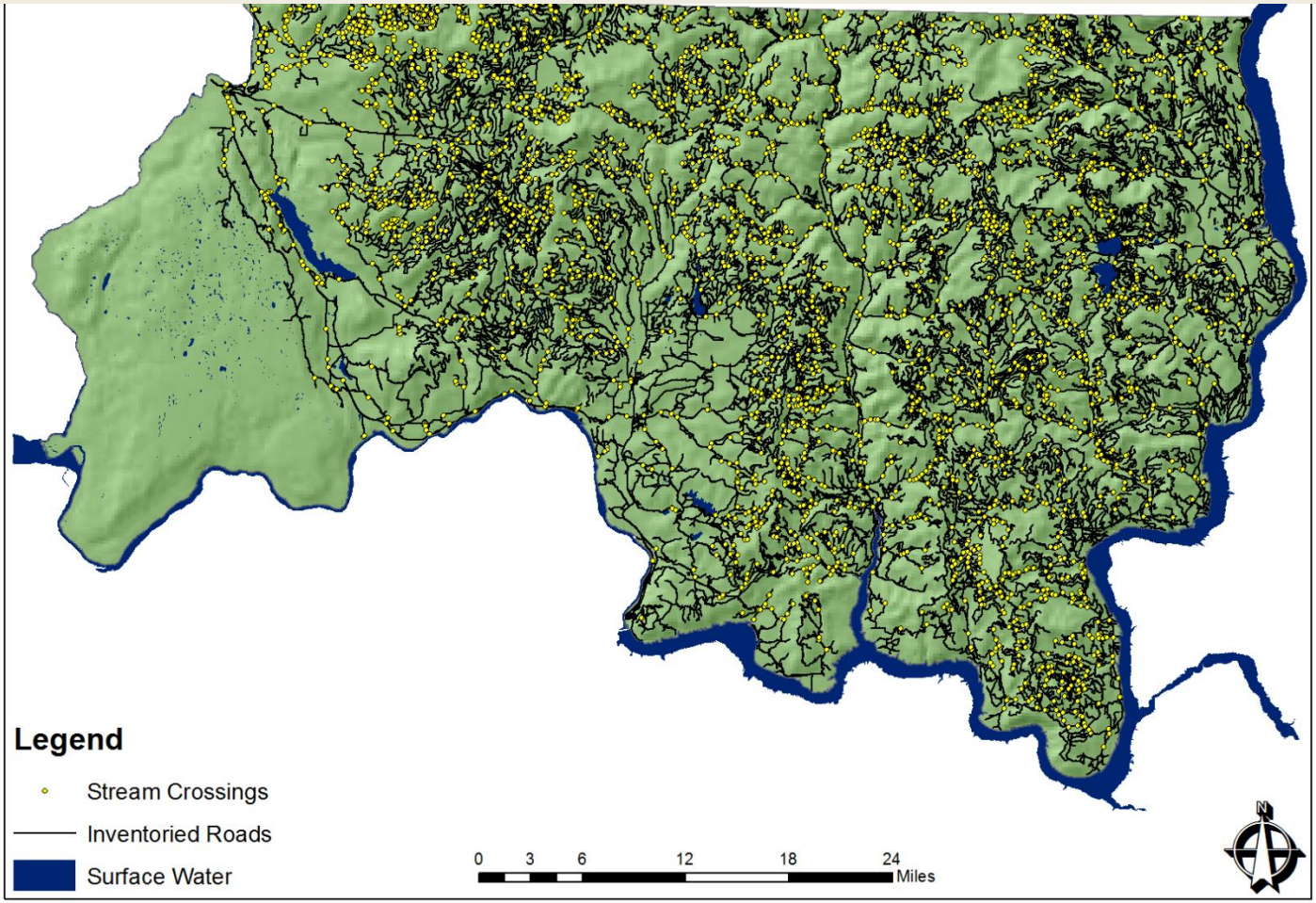
Pollution Control Strategies

- NPS Assessment & Management Plan
  - Revised/approved in 2012

NPS Category	Sub-Category (Issues)	Actions	Lead Entity	Resources	Measurable Outputs	Short-Term Objectives	Long-Term Objectives
		To address this category the following actions will occur:	Actions will be carried out/ administered by the following:	The following resources are available to accomplish actions:	Actions will have the following measureable outputs:	Objectives to be met within 1-3 years:	Objectives to be met within 3-5 years:
Silviculture	Timber harvest Reforestation practices Residue management	Provide permit review, compliance conditions, monitoring, and enforcement for all Forest Practices activities.	ETD	Forest Practices Administrator hours.	Annual report of Forest Practices permits, compliance inspections, violations, resource damage & mitigation.	More complete and consistent use of Tribal BMPs regarding forest practices. An operational annual erosion control workshop.	An assessment of BMP effectiveness, functionality, and compliance. Implemented outreach structure that will stimulate comprehensive NPS management. A baseline assessment of forest soil condition.
		Participate in Project Planning Process to incorporate NPS control in all FP projects undergoing the process.	ETD	Watershed Specialist and Forest Practice Administrator hours. Collaboration with 3P team (Forestry, Range, F&W, ETD, History and Archeology, Fire, etc.).	Written project comment providing NPS recommendations.		
		Provide NPS outreach and training to BIA Forestry, other stakeholders, and decision makers.	ETD	Forest Practices Administrator, Watershed Specialist, and Watershed Program Manager hours.	Annual report of outreach and training events.		
		Develop and conduct an annual BMP workshop for reservation resource managers and contractors.	ETD BIA Forestry F&W H&A	Forest Practices Administer, Watershed Specialist hours.	Annual report of workshop results.		
		Implement all appropriate BMPs to prevent NPS on Forest Practice activity areas.	BIA Forestry ETD Fire Management F&W	NRCS – EQIP BIA Funding	N/A		
		Develop and conduct an inventory assessing the soil condition of reservation forest lands.	ETD	Watershed Specialist hours.	Final Assessment Report.		
		Develop and conduct an assessment of NPS BMP effectiveness.	ETD F&W BIA Forestry	Forest Practices Administrator hours.	Final Assessment Report. Year 4 review for adaptive management, report end of year 5.		

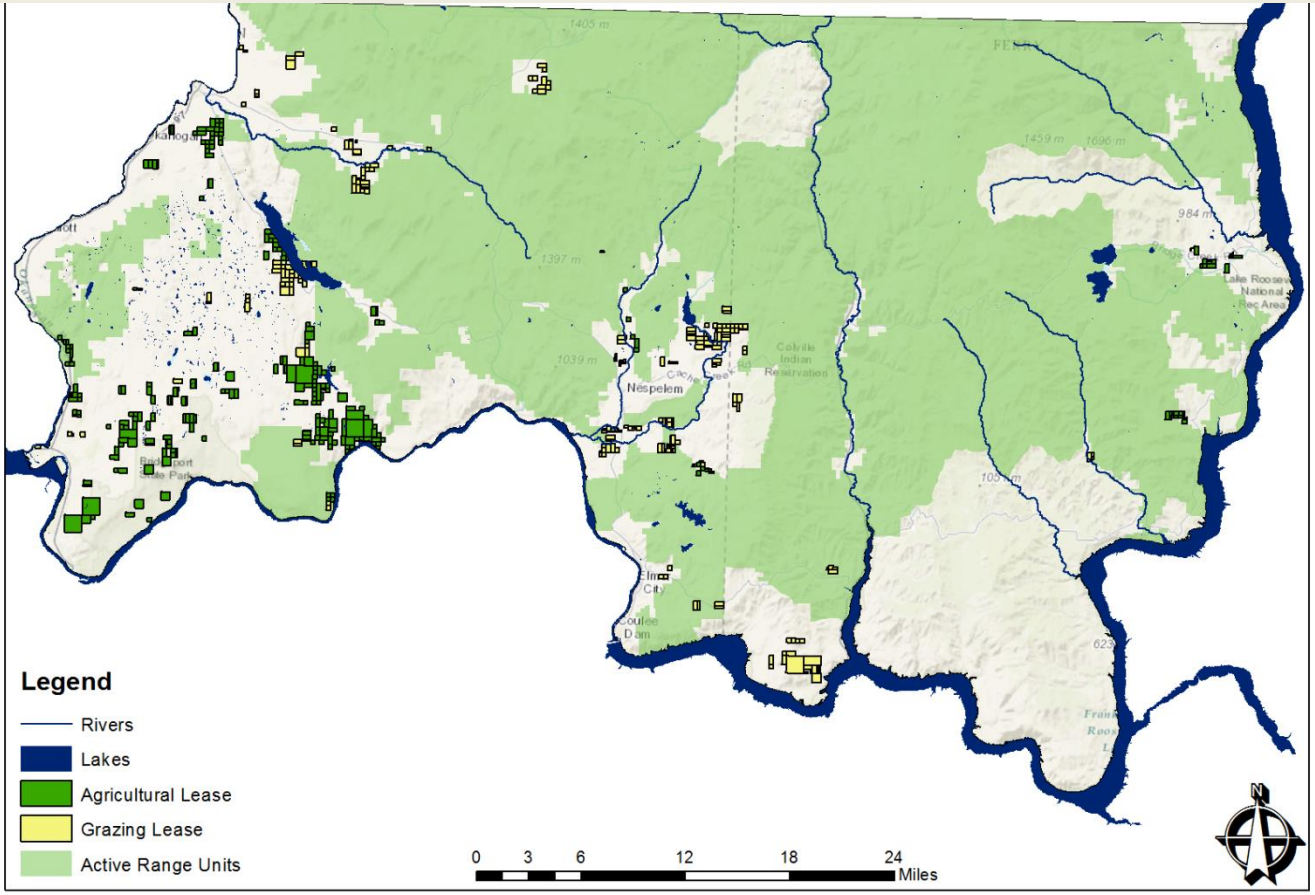
Pollution Control Strategies

– Road inventory (7,000 miles on Res) assessing sediment delivery to waters



Pollution Control Strategies

– Agricultural geodatabase (4,000 animals grazing ~875,000 acres)



Thanks

The End